Preventing Eye Infections in Rural Nepal

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Kari McLeod

[Photo: Voluntary female health worker in Tukucha village, Nepal.]

In Nepal, eye infections are the leading cause of blindness, after injury. Agricultural workers often get eye infections when they remove the chaff from wheat and rice by hand. This material then hits an eye, damaging the cornea.

Dev Shah, a physician and researcher at the B. P. Koirala Lions Center for Ophthalmic Studies at Tribhuvan University in Kathmandu, says that local remedies for such injuries include treating the eye with dirty water, honey, mud, and cow-dung. With 90% of Nepal's population involved either directly or indirectly with the agriculture sector, finding a low-cost and effective prevention strategy is a priority. Would eye protection solve the problem? "This is a common question," says Dr. Shah. "Our attempts at encouraging workers to wear protective glasses have been largely unsuccessful."

Three phase project

In the 1980's, researchers at the Koirala Lions Center asked the International Development Research Centre to help support what eventually became a three-phase project. In the first phase, the research team identified the cause of corneal infections and secondary blindness. In the second phase, they recorded an incidence rate of 17 cases per 1,000 people per year, and successfully tested a highly-efficacious and low-cost antibiotic treatment, called chloramphenicol. In the third phase, which is now nearing completion, the team developed an identification and treatment regime, delivered at the local level, and is testing its effectiveness in preventing infections. Nepal's Ministry of Health has agreed to adopt the program on a national scale if it proves cost-effective.

In November 1998, I visited three sub-health posts (SHPs) and three village wards with voluntary female health workers in the district of Kavre, just east of Kathmandu Valley where the third phase has been implemented. The project was initially targeted to train staff at the most peripheral level of Nepal's health system — the SHPs in nine villages: six in Kavre District and three in Sunsari District in southeast Nepal.

Training process

"The training process was actually quite simple," explains Dr Shah. "Staff were taught to identify cases of corneal abrasions using fluorescein strips and a flashlight with a blue beam. The strips dye the abrasion, which is illuminated by the blue-coloured light. They also learned to show injured persons how to self-administer inexpensive antibiotic applicaps — small capsules of medication applied directly to the eye."

Staff were also trained to monitor and record compliance and to trace the injured to their homes, if necessary. It turned out that far fewer cases of corneal abrasions were reported in the third phase of this project than in the second: only 7 cases per 1,000 people per year versus the 17 originally demonstrated. The researchers discovered that while SHP staff are skilled at identifying the abrasions, people do not always visit SHPs after sustaining an eye injury.

Survey results

"We needed to figure out why people were not using the SHPs," says Dr Shah. During a survey, "people gave us three major reasons for not seeking medical help." First, the SHPs are only open to visitors from 10 a.m to 2 p.m, and they are not open on Saturdays or holidays (Nepal celebrates approximately four months of holidays per year). Thus, injured people will often not find anyone at a sub-health post when they need them. Second, while each village has an SHP, the villages themselves are geographically dispersed, and some residents face long walks to reach the posts. And the third reason that people gave was a lack of trust in SHP personnel.

The survey also showed that voluntary female health workers (VFHWs) are the most accessible group of health care personnel. Each village has nine wards and each ward has a VFHW, who works both in her home and door-to-door in the community. These women, who participate in national primary health care programs, are trusted within the community. The research team found that villagers are more likely to approach them following an eye injury. Hence, VFHWs are in a better position to provide antibiotics for eye injuries. Since the survey was conducted, nine VFHWs in Tukucha, a village in Kavre district, have been trained to handle corneal abrasion cases.

Successful strategy

"The strategy has been very successful," says Dr Shah. "The number of abrasions reported in Tukacha has been much higher than in the other villages, and the incidence rate was the same as the one identified in phase two."

According to Dr Shah, the voluntary female health workers of Tukucha are motivated by the recognition and prestige they receive within their community, as well as the knowledge that they are helping their friends and neighbours avoid serious eye infection and possibly blindness. He and his colleagues are confident that along with the results from the first two phases of the project, the involvement of VHFWs in the corneal infection project will persuade the Ministry of Health to adopt this inexpensive program on a national scale.

Kari McLeod is a Research Associate with IDRC's MAPHealth Project. (Photo: E. Baris, IDRC)
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